
Some Hopefully Helpful Hints on how to Win an Early Career Award

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Disclaimer

- This is my own VERY Personal Point of View
 - Don't take this as gospel – but as a starting point.
 - Talk to other people and form your own opinions
 - Most of what I say will be obvious
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- My goal is for you to avoid the dumb mistakes that take you out of the game before the game even starts!
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Why Am I Doing This?

- I have been on the review side of these awards - both as write-in reviewer as well as a member of the final panel
 - I saw things that made me cringe
 - Worse - I saw things that removed what could have been a good proposal from contention
 - My goal is to give you the tools so at least you don't make me "cringe"
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What This Talk is Not!!!

- **A recipe book**
 - There is no single correct way to write it
 - There is no ideal approach
 - Every selection committee is different and may not come to the same set of conclusions...
 - However - there are themes that can be useful

Early Career Award

- It works in two ways...
 - Successful Candidate receives DOE funding
 - Unsuccessful candidates get guidance/feedback for future proposals and in some cases may get added to an existing grant.
 - It is important to apply! During final deliberations, DOE folks are in the room and listening as senior people discuss you!
 - The process can be of great benefit to you even if you don't get the award in terms of future funding!
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History of Award

- 1978-2010 Outstanding Junior Investigator program, specific to HEP. 5-7 awards per year, occasionally also to lab staff (although may have been faculty with dual appointments).
 - 2009 Requirement for EC or OJI review to be added to existing grant imposed.
 - 2010-Present Early Career award across Oce of Science, eight to university faculty, five to lab researchers in 2011.
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Snap Shot of Last Years Awards

- 13 Early Career awards, 8 to universities, 5 to labs
 - 4 to theorists
 - 3 to LHC (experimental)
 - 3 in cosmology/astronomy
 - 2 in accelerator physics
 - 1 in Intensity Frontier
 - Balanced Distribution
 - - in 2010 - More emphasis on Intensity Frontier than Energy Frontier
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How Does the Process Work

- **Pre Application Screening – asking PI's for an abstract...**
 - Gives DOE a chance to weed out applications that just don't make sense – not so relevant in HEP but in other areas of OOS – its important
 - HEP group can use these abstracts to put together proper review teams...
 - **Applications are Due November 29th, 2011**
 - <http://science.energy.gov/early-career/>
 - **Each proposal gets assigned ~5-6 reviewers who are asked to read their set and provide feedback**
 - **A Panel is formed. This panel gets ALL of the reviews AND all of the proposals**
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How Does the Process Work

- Each Panel member gets assigned 10-15 also to review and to present their findings to the other committee members
 - Panel members go over every proposal – with the discussion led by the member assigned to review it.
 - In the end – your proposal is read by 8-12 people I would say – your fate is not decided by any one individual!
 - Committee members rank the proposals
 - Then DOE uses this information along with its budget guidance and desire for research diversification to make the final selection
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What Are You Judged On?

1. Scientific and/or Technical Merit of the Project
 2. Appropriateness of the Proposed Method or Approach
 3. Competency of the Research Team and Adequacy of Available Resources
 4. Reasonableness and Appropriateness of the Proposed Budget
 5. Relevance to the mission of the Office of High Energy Physics (HEP) program
 6. Potential for leadership within the scientific community
 7. Provide a Rating....
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- **1. Scientific and/or Technical Merit of the Project.** What is the scientific innovation of proposed research? What is the likelihood of achieving valuable results? How might the results of the proposed research impact the direction, progress, and thinking in relevant scientific fields of research? How does the proposed research compare with other research in its field, both in terms of scientific and/or technical merit and originality?
 - **2. Appropriateness of the Proposed Method or Approach**
How logical and feasible are the research approaches? Does the proposed research employ innovative concepts or methods? Are the conceptual framework, methods, and analyses well justified, adequately developed, and likely to lead to scientifically valid conclusions? Does the applicant recognize significant potential problems and consider alternative strategies?
 - **3. Competency of Applicant's Personnel and Adequacy of Proposed Resources.** What are the past performance and potential of the Principal Investigator (PI)? How well qualified is the research team to carry out the proposed research? Are the research environment and facilities adequate for performing the research? Does the proposed work take advantage of unique facilities and capabilities?

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- **4. Reasonableness and Appropriateness of the Proposed Budget.**
 - Are the proposed budget and staffing levels adequate to carry out the proposed research? Is the budget reasonable and appropriate for the scope?

 - **5. Relevance to the mission of the specific program (e.g., ASCR, BER, BES, FES, HEP, or NP) to which the proposal is submitted.**
 - How does the proposed research contribute to the mission of the program in which the proposal is being evaluated?

 - **6. Potential for leadership within the scientific community.**
 - What has the Principal Investigator (PI) done to serve others in the scientific community outside of direct research contributions? How has the PI demonstrated the potential for scientific leadership and vision?
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Program Mission

- High Energy Physics (HEP): To understand how the universe works at its most fundamental level, which is done by discovering the elementary constituents of matter and energy, probing the interactions between them, and exploring the basic nature of space and time.
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Elements of the Proposal

- Proposal Cover Page
 - Budget (DOE Form 4620.1) and Budget Explanation
 - Project Summary/Abstract (no more than one page)
 - Project Narrative (**No more than 15 pages long**)
 - Appendix 1: Biographical Sketch (3 pages max)
 - Appendix 2: Current and Pending Support
 - Appendix 3: Bibliography and References Cited
 - Appendix 4: Facilities and Other Resources
 - Appendix 5: Equipment
 - Appendix 6: Other Attachment (optional)
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Comments

- The proposal really has two important parts that if not done well will end your chances
 - Narrative
 - Budget
 - Narrative
 - Need to make a physics case
 - Proposals that have both a service/upgrade component that is strongly linked to a physics measurement are somewhat more favored
 - Proposals that are solely physics can fly, a proposal that has NO physics will not
 - Idea does not have to be revolutionary - but needs to be well motivated, address an important question facing our field, and enough support provided to convince the reviewer that its doable. (YOU NEED PLOTS!)
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Narrative Continued

- Time Scale for the physics may be a few years out - maybe you need a large data sample AND a new tagging algorithm - both of which takes time - that's ok!!!
 - If there is a hardware component in the proposal, you need to convince reader that you have sufficient hardware expertise to do it - that you are not just an analysis jock (either in narrative or bio sketch)
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Budget

- Lower Limit is \$150k/year for University folk and \$500k/year for Laboratory Folk
 - There is no upper limit but guidance says “stay close to the minimum”!!!
 - Funds can be used for student/pd salary, travel, equipment, salary for lab staff, summer salary for University folk
 - Include direct and indirect costs
 - You should include a narrative detailing why these funds are both necessary and sufficient. This narrative is not a throw away - its **IMPORTANT** to write well!!!
 - It is ok to go above the guidance if you can defend it.
 - DOE will not provide partial support - its all or nothing!
 - You don't need to put in 100% of your salary - put in the minimum amount and leverage the \$\$\$ further
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Helpful Hints

- Spend the time and put forth your best effort!!! - this is hard work to do it well
 - You may have the worlds best idea - but if you can't articulate it clearly, in writing, using the "queens english" with proper grammar you put yourself at risk
 - Ask senior colleagues to read AND COMMENT on your proposal. Don't go it alone.
 - Start NOW - this is not something most can do well in a weekend
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Misc

- You can specify names of people who you explicitly do NOT want to review your document. This request should go to OHEP separately and not be included in your grant submission
 - No letters of recommendation can be included!!!
 - Suggested start date for funding of July 2012
 - Technical Contact: Eli Rosenberg, 301-903-3711, eli.rosenberg@science.doe.gov (lab)
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Final Thought

- DOE and Reviewers understand that if you are in a situation to submit one, the field has already said you are outstanding.
 - Tremendous recognition on how hard it is to get a job in this field!
 - Getting to the point where you have the ability to write one is already a very significant accomplishment!
 - Going through the process will help you if you take it seriously - whether you get the award or not.
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